ORIGINAL RESEARCH PAPER
Volume - 13 | Issue - 08 | August - 2024 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

A COMPARATIVE STUDY ON EFFECT OF VAGINAL DELIVERY AND CESAREAN SECTION ON THE PATTERN OF PRIMARY DYSMENORRHEA AFTER CHILDBIRTH.

Obstetrics & Gynaecology

Lingamgunta .Hithaishi* Department of Obstetrics and Gynaecology, ACS Medical College, and Hospital, Thiruverkadu, Chennai, Tamil Nadu, India. *Corresponding Author

P. S. Jikki Kalaiselvi Department of Obstetrics and Gynaecology, ACS Medical College, and Hospital, Thiruverkadu, Chennai, Tamil Nadu, India.

Vijayalakshmi Gnanasekaran Department of Obstetrics and Gynaecology, ACS Medical College, and Hospital, Thiruverkadu, Chennai, Tamil Nadu, India.

G.Ganitha Department of Obstetrics and Gynaecology, ACS Medical College, and Hospital, Thiruverkadu, Chennai, Tamil Nadu, India.

ABSTRACT

Primary dysmenorrhea is the most prevalent gynecological condition among women of reproductive age and is one of the leading causes of pelvic pain. Numerous studies have proposed that childbirth may impact primary dysmenorrhea.

Aims & Objectives:

Primary objective is to determine the effect of vaginal delivery and cesarean section on the pattern of primary dysmenorrhea.

Secondary objective :

- To compare the pattern of primary dysmenorrhea before childbirth and after childbirth
- To determine prevalance of primary dysmenorrhea before and after childbirth.

Materials And Methods: This observational cohort study included 200 parous women with primary dysmenorrhea,who attended our gynaecology OPD from october 2023 to december 2023.

Inclusion Criteria:

- Parous women who had primary dysmenorrhea before childbirth
- Women aged 20-35 years with LCB <5 years .
- 100 women who had undergone vaginal delivery and 100 women who had undergone cesarean section were included.

Exclusion Criteria:

- Women with secondary causes of dysmenorrhea
- IUCD or OCP users.
- H/o tubectomy

Questionnaire containing demographic survey, menstrual pattern record , and verbal multidimensional scoring system was used to evaluate dysmenorrhea severity.

Results: According to this study 80.6% of women encountered severe primary dysmenorrhea before childbirth,after childbirth it reduced to 20.9% & 22.5% following 1st & 2nd delivery respectively ($p<0.001$ significant). 60% of those who had undergone vaginal delivery experienced reduced severity of dysmenorrhea whereas 40% of those who had undergone cesarean section experienced reduced severity($P<0.001$,significant).

Conclusion: Childbirth impacts primary dysmenorrhea, with significant improvements noted particularly after the first delivery. It also brings to light that delivering vaginally could reduce the intensity of primary dysmenorrhea to a greater extent than undergoing a cesarean section.

KEYWORDS

Primary dysmenorrhea, Childbirth, Mode of delivery, Vaginal delivery, Cesarean section

INTRODUCTION:

Primary dysmenorrhea is menstrual pain without pelvic disease [1]. It's caused by excess prostaglandin production, leading to uterine muscle ischemia. It is characterized by the excessive production of prostaglandins by the endometrium, leading to heightened uterine contractions, which in turn causes ischemia, hypoxia, and pain in the uterine muscles.

It is the most prevalent gynecological condition among women of reproductive age and is one of the leading causes of pelvic pain.

The prevalence of dysmenorrhea is reported to be between 25-75%.[3] Variations in reported prevalence may be attributed to differences in how patients communicate their symptoms to healthcare providers (self-reporting) and how healthcare providers inquire about these symptoms.

Dysmenorrhea can be classified into two types - primary and secondary. Primary dysmenorrhea refers to menstrual cramps without any identifiable pelvic inflammatory disease[4,5].

Secondary dysmenorrhea is characterized by painful periods caused by pelvic pathologies.[4,5].

In primary dysmenorrhea, no specific abnormalities are observed in the female reproductive system, and the pain typically begins concurrently with or a few hours before menstrual bleeding, lasting for a maximum of 2-3 days. These pains are often associated with menstruation-related to ovulation[6]. and pain. It's a common issue in women of reproductive age and a key cause of pelvic pain.

Multiple studies suggest that dysmenorrhea may alleviate post-childbirth.

Understanding the prevalence and characteristics of primary dysmenorrhoea among postpartum women is essential for healthcare providers to offer targeted management strategies and improve overall postpartum care. By examining the differences in dysmenorrhoea patterns between vaginal and cesarean deliveries, this study aims to provide deeper insights into how childbirth experiences shape women's reproductive health outcomes.

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Table 1: Grading Of Dysmenorrhea Based On Symptoms Using Verbal Multidimensional Scoring System

Severity grading	Working ability	Systemic symptoms	analgesics
Grade 0 - menstruation not painful & daily activity unaffected	unaffected	none	Not required
Grade 1-mild pain	rarelyaffected	none	Rarely required
Grade 2 - moderate pain ,daily activity affected	Moderately affected	few	Required
Grade 3 -severe pain	Clearly inhibited	apparent	Poor effect

RESULTS:

Data obtained from the analysis of 200 study participants was utilized to evaluate the trends concerning primary dysmenorrhea concerning the intensity of pain, length, nature, whereabouts, and accompanying symptoms pre and post-childbirth.

Analysis of 200 study participants shows that ,the mean age of the women participated was (25.2±3.57 years),the mean age at which they attained menarche was (13.6±1.54 years).

The mean age of marriage was (19.6±3.1 years), The mean age of children was (22.6±8.06 months), the mean time for onset of menstruation following childbirth was (5.05±4.17 months), and length of breastfeeding (8.1±5.61 months) were noted.

Table 2: Age Distribution.

AGE	NVD	CS	Total
20-25 years	44	30	74
26-30 years	40	52	92
30-35 years	16	18	34
Total	100	100	200

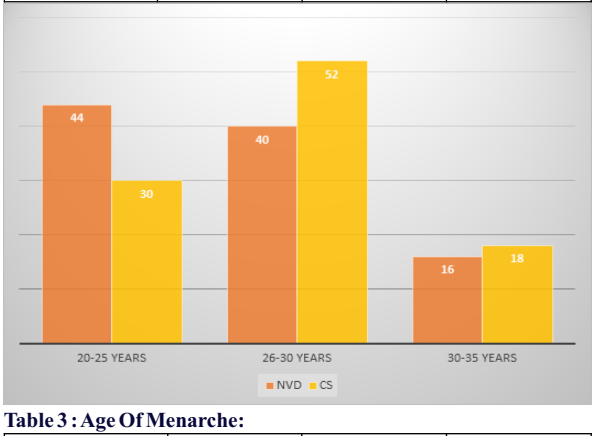


Table 3 : Age Of Menarche:

Age of menarche	NVD	CS	Total
12 years	40	40	80
13 years	48	50	98
14 years	12	10	22
Total	100	100	200

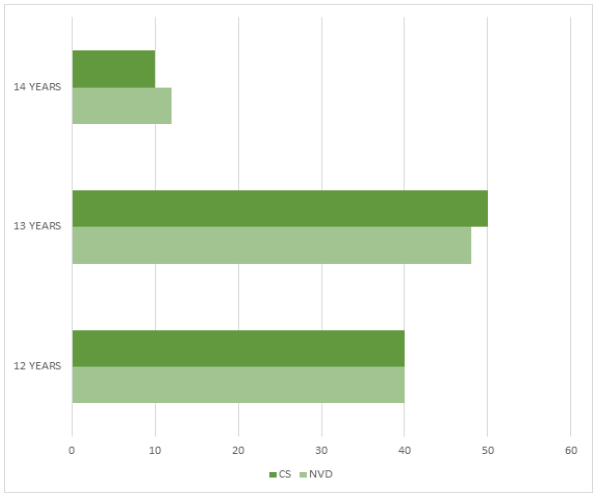


Table 4 : Age Of Marriage :

Age of marriage	NVD	CS	Total
18-20 years	54	38	92
20-25 years	24	44	68
25-30 years	22	18	40
Total	100	100	200

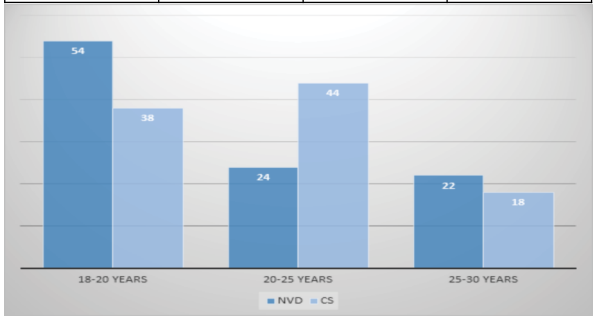


Table 5 : Age Of Last Child

Age	NVD	CS	Total
<1 year	20	18	38
1-2 years	54	48	102
2-3 years	14	20	34
>3 years	12	14	26
Total	100	100	200

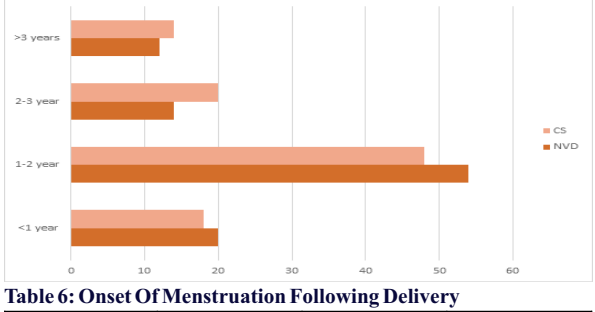


Table 6: Onset Of Menstruation Following Delivery

Time of onset	NVD	CS	Total
3-6 months	68	54	122
6 -12 months	32	46	78
Total	100	100	200

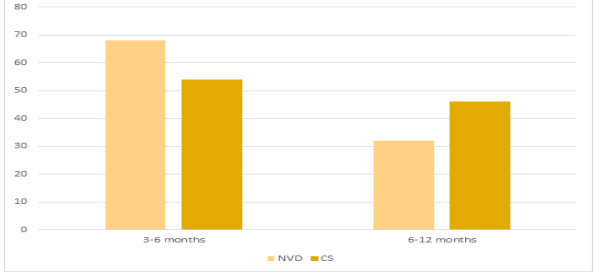
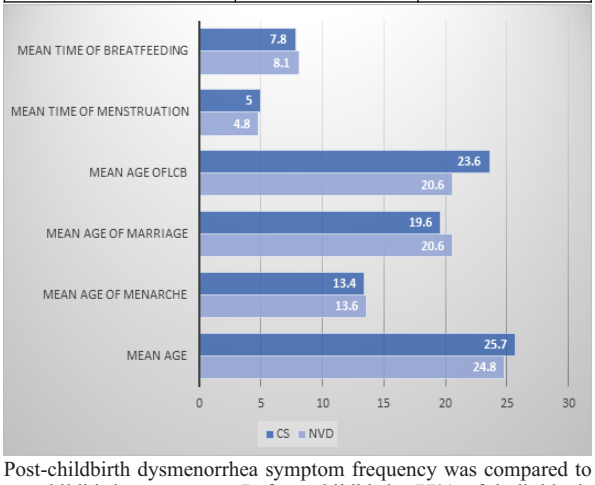


Table 7:

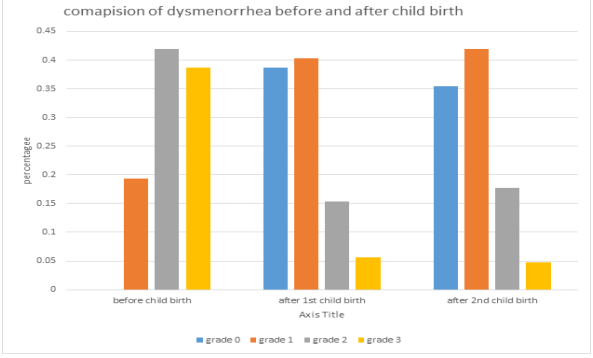
	NVD	CS
Mean Age	24.8±3.57 years	25.7±3.57 years
Mean age of menarche	13.6±1.54 years	13.4±1.54 years
Mean age of marriage	20.6±3.1 years	19.6±3.1 years
Mean age of last child	20.6±8.06 months	23.6±8.06 months
Mean time of of onset of menstruation	4.8±4.17 months	5.0±4.17 months
Mean time of breast feeding time	8.1±5.61 months	7.8±5.61 months



Post-childbirth dysmenorrhea symptom frequency was compared to pre-childbirth symptoms. Before childbirth, 77% of individuals experienced multiple pain symptoms, as indicated in TABLE 8.

Table 8. Comparing primary dysmenorrhea severity based on verbal multidimensional scoring system for assessment of Dysmenorrhea severity Before childbirth and after childbirth.

Dysmenorrhea grades	Before child birth (N%)	After one child birth (N%)	After two child birth (N%)	Paired Wilcoxon signed-rank test results
Grade 0	0	77(38.7%)	28(35.4%)	Before childbirth and the first report after childbirth z=-8.2, P 0.001
Grade 1	39 (19.3 %)	81 (40.3%)	34(41.9%)	Before childbirth and the second report after childbirth z=-8, P 0.001
Grade 2	84 (41.9%)	31 (15.3%)	14 (17.7%)	
Grade 3	77 (38.7%)	11(5.6 %)	4 (4.8%)	
Total	200	200	80	



The investigation displayed that 80.6% of the participants encountered dysmenorrhea classified as grade 2 and 3 before giving birth as per a verbal multidimensional rating method. This proportion dwindled to 20.9% and 22.5% after the initial and subsequent deliveries correspondingly.

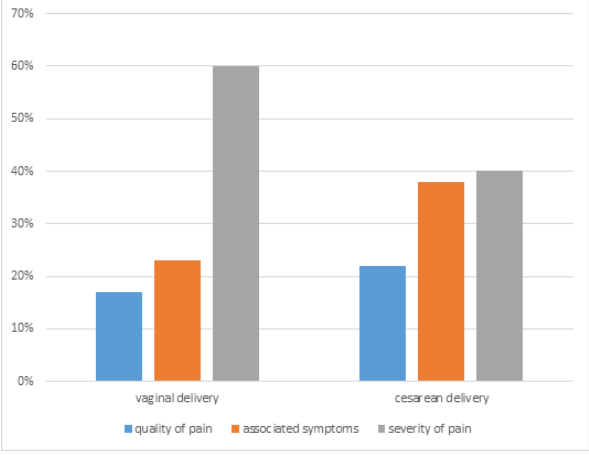
The paired Wilcoxon signed-rank test illustrated a substantial decline in the severity of dysmenorrhea post-childbirth in comparison to pre-delivery (P1<0.001, P2<0.001).{P1 is significance after 1st childbirth and P2 is significance value after 2nd childbirth respectively}

This research revealed a noteworthy decrease in dysmenorrhea severity after vaginal delivery compared to cesarean section.

Among 200 participants, 60% of those who had undergone vaginal delivery experienced reduced severity of dysmenorrhea whereas 40% of those who had undergone cesarean section experienced reduced severity(P<0.001,significant). However, there were no significant discrepancies in pain characteristics (p<0.39) and menstruation-related symptoms (p<0.82) between the two groups, as illustrated in Table 9.

Table 9:

Dysmenorrhea	Following Vaginal Delivery	Following Cesarean Delivery	Significance
SEVERITY	Reduced in 60 subjects***(60%)***	reduced in 40 subjects who underwent emergency cesarean**(40%)**	**P<0.001**
PAIN QUALITY	Reduced in 17 subjects **(17%)**	reduced in 22 subjects**(22%)**	**P<0.39**
ASSOCIATED SYMPTOMS	reduced in 23 subjects**(23%)**	reduced in 38 subjects**(38%)**	**P<0.82**



DISCUSSION:

The study showed a notable decrease in pain severity post-childbirth, compared to pre-childbirth.

Furthermore, it indicated a variation in dysmenorrhea patterns based on the delivery method.

For example, Shahri et al. (2013) in their study concluded that childbirth could generally moderate primary dysmenorrhea but the mode of delivery was not effective in this respect because of the sampling method employed in their study.

Moreover, these authors stated that the mode of delivery had no impact on the primary dysmenorrhea considering that most of the samples (81%) in the group with Caesarean section were cases having emergency Caesarean section.

In addition, no difference was observed between women undergoing Cesarean section after the onset of childbirth pains due to increased prostaglandins and those with vaginal delivery.[17]

Giambrardino (2008) also mentioned that women experience pain during childbirth because it is a natural process, leading to painful

menstruation which is considered normal and enables them to endure more pain.

Additionally, certain research indicates that primary dysmenorrhea results from heightened sensitivity of uterine adrenergic nerves.

It appears that these nerve fibers decrease in the lower uterine segments during pregnancy and only partially regenerate after giving birth.[8]

According to Firoozi et al. (2013), the prevalence of primary dysmenorrhoea can vary widely, affecting up to 90% of menstruating women, with a substantial impact on their quality of life and daily activities. The condition is particularly notable in postpartum women, as the mode of delivery might influence the recurrence and severity of menstrual pain after childbirth. Studies have suggested that hormonal and physical changes during pregnancy and childbirth could alter the uterine environment, potentially affecting dysmenorrhoea patterns. [7]

Ju et al. (2014) highlight that while many women experience relief from menstrual pain during pregnancy, the postpartum period can bring a resurgence of symptoms, sometimes with varying intensity depending on the delivery method. Understanding the prevalence and characteristics of primary dysmenorrhoea among postpartum women is essential for healthcare providers to offer targeted management strategies and improve overall postpartum care.

These conclusions align with reports from women who mention decreased pain during menstruation after having children.[18]

Among the constraints of this study was the preference for conducting it prospectively. This involves enrolling subjects and documenting dysmenorrhea patterns pre-childbirth. However, executing this plan was nearly unfeasible due to the unpredictability of pregnancy and childbirth in married women. Additionally, there was a time constraint for study execution. The study data can aid in advising and educating women with primary dysmenorrhea on post-childbirth menstrual cramp pattern changes.

CONCLUSION:

Primary dysmenorrhea is the most prevalent and distressing problem foe every women ,right from menarche.

Childbirth is found to be a miraculous treatment for this condition.

The findings of this study has shown that childbirth has reduced severe dysmenorrhea from 80 % to as low as 20% in women. It also shows that vaginal birth is a better contributor for the pain relief in women than cesarean section.

Strengths And Limitations

This study boasts several strengths that enhance its validity and reliability. One major strength is the large sample size of 200 participants, which provides sufficient statistical power to detect meaningful differences between the vaginal and cesarean delivery groups (Saha, 2018). The robust data collection methods, including the use of structured questionnaires, medical records, and standardized pain rating scales, ensure comprehensive and accurate capture of relevant information. These tools allow for a detailed analysis of dysmenorrhoea intensity, frequency, and associated symptoms, contributing to a nuanced understanding of the impact of delivery mode on menstrual pain.

However, the study also has limitations that must be acknowledged. One potential limitation is the reliance on self-reported data for dysmenorrhoea intensity and frequency, which can introduce recall bias and subjective variability in pain perception (Madlol, 2011). Although medical records were used to corroborate some of the data, self-reported measures are inherently limited by participants' memory and personal pain thresholds. Additionally, the cross-sectional design of the study, while useful for capturing a snapshot of postpartum dysmenorrhoea, does not allow for the establishment of causal relationships between delivery mode and menstrual pain. Longitudinal studies would be more effective in tracking changes over time and establishing a clearer cause-and-effect relationship. Finally, the study may be limited by potential selection bias, as participants were recruited from specific healthcare settings, which might not be representative of the broader population. Despite these limitations, the study provides valuable insights and contributes significantly to the understanding of how delivery mode affects primary dysmenorrhoea, guiding future research and clinical practice.

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